

WHAT IS CLAIMED IS:

1 1. A network interface device located at a customer's premises,
2 comprising:
3 an external interface that receives a plurality of telecommunication services
4 via a fiber optic connection from a telecommunication service provider, wherein the services
5 are received using Internet Protocol;
6 at least two distinct internal interfaces that distribute the plurality of
7 telecommunication services to at least two distinct internal transport media; and
8 a processor programmed to:
9 receive combined signals comprising the telecommunication services
10 from the external interface;
11 process the combined signals into separate signals representative of
12 distinct telecommunication services; and
13 map each of the separate signals to separate ones of the at least two
14 distinct internal interfaces for distribution at the customer's premises via the internal transport
15 media.

1 2. The network interface device of claim 1, wherein the external interface
2 is further configured to direct signals relating to the telecommunication services to the
3 telecommunication service provider via the fiber connection using Internet Protocol.

1 3. The network interface device of claim 1, wherein at least one of the at
2 least two distinct internal interfaces is configured to receive signals relating to one of the
3 telecommunication services from one of the internal transport media.

1 4. The network interface device of claim 1, wherein the processor is
2 further programmed to:
3 receive separate signals from the at least two distinct internal transport media;
4 process the separate signals into a combined signal; and
5 direct the combined signal to the external interface for distribution to the
6 telecommunication service provider via the fiber optic connection using Internet Protocol.

1 5. The network interface device of claim 1, further comprising a signal
2 integrator in communication with the at least two distinct internal interfaces, wherein the

3 signal integrator is operable to integrate signals from the at least two distinct internal
4 transport media into a combined information set.

1 6. The network interface device of claim 1, wherein at least one of the
2 internal transport media comprises a coaxial cable.

1 7. The network interface device of claim 1, wherein at least one of the
2 internal transport media comprises a twisted pair cable.

1 8. The network interface device of claim 7, wherein the twisted pair cable
2 comprises existing telephone wiring at the customer premises.

1 9. The network interface device of claim 7, wherein the twisted pair cable
2 comprises an Ethernet cable.

1 10. The network interface device of claim 1, wherein the fiber optic
2 connection comprises a single-strand fiber optic connection capable of providing two-way
3 communication.

1 11. The network interface device of claim 10, wherein the single-strand
2 fiber optic connection uses either or both of wave-division multiplexing and time-division
3 multiplexing.

1 12. The network interface device of claim 1, wherein the fiber optic
2 connection comprises a multi-strand fiber optic connection.

1 13. The network interface device of claim 1, wherein the external interface
2 comprises at least one multiplexer.

1 14. The network interface device of claim 1, wherein the
2 telecommunication services comprise one or more selections from the group consisting of
3 video, data, and voice.

1 15. The network interface device of claim 14, wherein different
2 telecommunication services are transported in different frequency ranges.

1 16. The network interface device of claim 1, wherein the internal
2 interfaces comprise a selection from the group consisting of IEEE 1394, RG6, RG59,

3 wireless interface, 802.11, LMDS, Ethernet, twisted pair, category 3, category 4, category 5,
4 category 6, category 7, and coaxial.

1 17. The network interface device of claim 1, wherein signals are
2 transported on the internal transport media using a protocol selected from the group
3 consisting of HPNA, HPNA+, and Home Plug.

1 18. The network interface device of claim 1, wherein the plurality of
2 telecommunication services originate from a plurality of telecommunication service
3 providers.

1 19. A system for providing telecommunication services to a customer's
2 premises, comprising:
3 an external transport medium comprising a fiber optic distribution system that
4 uses Internet protocol to deliver the telecommunication services to the customer's premises;
5 and
6 a network interface device at the customer's premises, wherein the network
7 interface device comprises:
8 an external interface that receives a plurality of telecommunication
9 services via the external transport medium;
10 at least two distinct internal interfaces that distribute the plurality of
11 telecommunication services to at least two distinct internal transport media; and
12 a processor programmed to:
13 receive combined signals comprising the telecommunication
14 services from the external interface;
15 process the combined signals into separate signals
16 representative of distinct telecommunication services; and
17 map each of the separate signals to separate ones of the at least
18 two distinct internal interfaces for distribution at the customer's premises via the internal
19 transport media.

1 20. The system of claim 19, wherein the external interface is further
2 configured to direct signals relating to the telecommunication services to the
3 telecommunication service provider via the fiber connection using Internet Protocol.

1 21. The system of claim 19, wherein at least one of the at least two distinct
2 internal interfaces is configured to receive signals relating to one of the telecommunication
3 services from one of the internal transport media.

1 22. The system of claim 19, wherein the processor is further programmed
2 to:
3 receive separate signals from the at least two distinct internal transport media;
4 process the separate signals into a combined signal; and
5 direct the combined signal to the external interface for distribution to the
6 telecommunication service provider via the fiber optic connection using Internet Protocol.

1 23. The system of claim 19, further comprising a signal integrator in
2 communication with the at least two distinct internal interfaces, wherein the signal integrator
3 is operable to integrate signals from the at least two distinct internal transport media into a
4 combined information set.

1 24. The system of claim 19, wherein at least one of the internal transport
2 media comprises a coaxial cable.

1 25. The system of claim 19, wherein at least one of the internal transport
2 media comprises a twisted pair cable.

1 26. The system of claim 25, wherein the twisted pair cable comprises
2 existing telephone wiring at the customer premises.

1 27. The system of claim 25, wherein the twisted pair cable comprises an
2 Ethernet cable.

1 28. The system of claim 19, wherein the fiber optic connection comprises a
2 single-strand fiber optic connection capable of providing two-way communication.

1 29. The system of claim 28, wherein the single-strand fiber optic
2 connection uses either or both of wave-division multiplexing and time-division multiplexing.

1 30. The system of claim 19, wherein the fiber optic connection comprises a
2 multi-strand fiber optic connection.

1 31. The system of claim 19, wherein the external interface comprises at
2 least one multiplexer.

1 32. The system of claim 19, wherein the telecommunication services
2 comprise one or more selections from the group consisting of video, data, and voice.

1 33. The system of claim 32, wherein different telecommunication services
2 are transported in different frequency ranges.

1 34. The system of claim 19, wherein the internal interfaces comprise a
2 selection from the group consisting of IEEE 1394, RG6, RG59, wireless interface, 802.11,
3 LMDS, Ethernet, twisted pair, category 3, category 4, category 5, category 6, category 7, and
4 coaxial.

1 35. The system of claim 19, wherein signals are transported on the internal
2 transport media using a protocol selected from the group consisting of HPNA, HPNA+, and
3 Home Plug.

1 36. The system of claim 19, wherein the plurality of telecommunication
2 services originate from a plurality of telecommunication service providers.

1 37. A method of delivering a plurality of telecommunication services to a
2 customer's premises, comprising:
3 receiving combined signals comprising the telecommunication services from a
4 telecommunication service provider via an external interface to a fiber optic connection,
5 wherein the services are received using Internet Protocol;
6 processing the combined signals into separate signals representative of distinct
7 telecommunication services; and
8 mapping each of the separate signals to separate ones of at least two distinct
9 internal interfaces to at least two distinct internal transport media for distribution at the
10 customer's premises via the internal transport media.

1 38. The method of claim 37, wherein the external interface is further
2 configured to direct signals relating to the telecommunication services to the
3 telecommunication service provider via the fiber connection using Internet Protocol.

1 39. The method of claim 37, wherein at least one of the at least two
2 distinct internal interfaces is configured to receive signals relating to one of the
3 telecommunication services from one of the internal transport media.

1 40. The method of claim 37, further comprising:
2 receiving separate signals from the at least two distinct internal transport
3 media;
4 processing the separate signals into a combined signal; and
5 directing the combined signal to the external interface for distribution to the
6 telecommunication service provider via the fiber optic connection using Internet Protocol.

1 41. The method of claim 37, further comprising integrating signals from
2 the at least two distinct internal transport media into a combined information set.

1 42. The method of claim 37, wherein at least one of the internal transport
2 media comprises a coaxial cable.

1 43. The method of claim 37, wherein at least one of the internal transport
2 media comprises a twisted pair cable.

1 44. The method of claim 43, wherein the twisted pair cable comprises
2 existing telephone wiring at the customer premises.

1 45. The method of claim 43, wherein the twisted pair cable comprises an
2 Ethernet cable.

1 46. The method of claim 37, wherein the fiber optic connection comprises
2 a single-strand fiber optic connection capable of providing two-way communication.

1 47. The method of claim 46, wherein the single-strand fiber optic
2 connection uses either or both of wave-division multiplexing and time-division multiplexing.

1 48. The method of claim 37, wherein the fiber optic connection comprises
2 a multi-strand fiber optic connection.

1 49. The method of claim 37, wherein the external interface comprises at
2 least one multiplexer.

1 50. The method of claim 37, wherein the telecommunication services
2 comprise one or more selections from the group consisting of video, data, and voice.

1 51. The method of claim 50, wherein different telecommunication services
2 are transported in different frequency ranges.

1 52. The method of claim 37, wherein the internal interfaces comprise a
2 selection from the group consisting of IEEE 1394, RG6, RG59, wireless interface, 802.11,
3 LMDS, Ethernet, twisted pair, category 3, category 4, category 5, category 6, category 7, and
4 coaxial.

1 53. The method of claim 37, wherein signals are transported on the internal
2 transport media using a protocol selected from the group consisting of HPNA, HPNA+, and
3 Home Plug.

1 54. The method of claim 37, wherein the plurality of telecommunication
2 services originate from a plurality of telecommunication service providers.